RPI / BIO GRO
A WASTE MANAGEMENT COMPANY

173 98th Avenue
Oakland, CA 94603
(510) 613-2831
(510) 613-2837 Fax

September 9, 1999

Mr. Todd Thompson
Associate Water Resources Control Engineer
Division of Water Quality
State Water Resources Control Board
P. O. Box 944213
Sacramento, CA 94244-2130

Dear Mr. Thompson:

RPI/Bio Gro, a Waste Management Company thanks you for the opportunity to comment on the Draft Environmental Impact Report Covering General Waste Discharge Requirements for Biosolids Land Application. RPI/Bio Gro supports the document, however has attached a document with suggested changes. 45-1

The main issues of specific concern involve vehicle travel mile limits, farm runoff controls, more restrictive standards than the scientifically imposed Federal 503 Rule. Each of these points are discussed in detail in the attached document. 45-2

RPI/Bio Gro requests that we remain on the mailing list and receive a copy of the Final EIR. For further discussion, feel free to contact me or Brian Mohr at (510) 613-2831.

Sincerely,

Heidi Marks

Heidi Marks
Technical Services Coordinator

cc: Brian Mohr, RPI/Bio Gro

Encl.

Mark Adelson, RWQCB 8, 3737 Main St., Suite 500, Riverside, CA 92501-3339
Jehiel Cass, RWQCB 6, 15428 Civic Dr., Suite 100, Victorville, CA 92392-2359
Bill Croyle, RWQCB 5,3443 Routier Rd., Suite A, Sacramento, CA 95827-3003
NJ Khilnani, RWQCB 7, 73-720 Fred Waring Dr., Palm Desert, CA 92260
Rebecca Stewart, RWQCB 9, 9771 Clairmont Mesa Blvd., Suite B, San Diego, CA 92124

G:\EXCHANGE\HEIDI\ltr_draft.doc

RPI/Bio Gro-suggested changes to the Draft Environmental Impact Report, Biosolids Land Application June 1999

EXECUTIVE SUMMARY

Page ES-6 Overview

Within this paragraph, please provide clarification as to the status of individual Waste Discharge Requirements (WDR's) regulating current biosolids land application, and if they will be impacted by the adoption of the General Order. 45-3

Page ES-7, 3rd paragraph

The "threat to water quality" complexity ratings brings about negative connotations to the biosolids application. The majority of problems associated with land application of biosolids are public perception, and this rating system implies that no matter how big the farm there will be a threat to water quality if biosolids are applied. 45-4

Page ES-9, 7th bullet, reads as follows:

"...for land reclamation sites if a certified agronomist, registered agricultural engineer, or registered civil engineer..."

RPI/Bio Gro suggests:

"...for land reclamation sites if a certified agronomist, **certified soil scientist**, registered agricultural engineer, or registered civil engineer..." 45-5

The American Society of Agronomy has implemented the ARCPACS certification program to bring rigorous industry standards for agronomists and soil scientists alike. The study of soil science involves both the macro and micro scale of the environment. Soils are the buffer between the air and water, as well as a medium for plant growth. Soils are dynamic and complex by nature, and soil scientists specialize in understanding the interactions between the chemical, biological, and physical components. Also see comments on and Page 3-23.

Page ES-9, 8th bullet, reads as follows:

"...30 days of application unless a sufficient buffer of grass (more than 33 feet) ..."

RPI/Bio Gro suggests:

"...30 days of application unless a sufficient buffer of vegetation (more than 30 feet) ..." 45-6

The suggested "vegetation" is more general than grass, and may account for crop residues, etc.

Page ES-9, 10th bullet, reads as follows:

No application or incorporation into the soil is permitted when wind may reasonably be expected to cause airborne particulates to drift from the site. 45-7

RPI/Bio Gro suggests deleting the statement because of the subjectivity of reader. The word reasonably is subjective and may be used when suspicions are both legitimate and not legitimate.

The vast majority of biosolids contain 70 to 85% water. As such, it is extremely unlikely that any biosolids would be transported off site.

45-7 (cont)

Page ES-9, 11th bullet, reads as follows:

No application is permitted in areas subject to erosion or washout offsite.

RPI/Bio Gro suggests:
No application is permitted in areas subject to gully erosion or washout offsite.

There are many different kinds of erosion. It can be in subtle forms such as sheet erosion, or more appear in more dramatic forms such as rill and gully erosion. All soil, and certainly every farm field, is subject to some form of erosion and the potential for erosion increases with the required tillage practices. Prohibiting the land application of biosolids to land subject to erosion would necessarily preclude land application altogether.

It should also be pointed out that organic matter is the sole factor that can reduce soil erosion by improving soil structure and improving water absorption.

45-8

Page ES-10, 5th bullet, reads as follows:

"If the slope of the application site is greater than 10%, an erosion control plan must be prepared by a qualified erosion control specialist."

RPI/Bio Gro suggests:
If the slope of the application site is greater than 10%, an erosion control plan must be prepared by a qualified erosion control specialist or certified soil scientist.

See comments on items ES-9, bullet 7 and Page 3-23.

45-9

Page ES-11, 1st bullet, reads as follows:

An NOI must be submitted for each biosolids source and discharge site. Specific agencies, adjacent residents, adjacent landowners identified in the GO and any local agency with jurisdiction over the application site must be notified. The RWQCB must be notified of project completion through submittal of a Notice of Termination and a Final Discharge and Monitoring Report.

RPI/Bio Gro suggests:
An initial NOI must be submitted for each discharge site including all of the biosolids sources. Specific agencies and adjacent residents ~~adjacent landowners~~ identified in the GO and any local agency with jurisdiction over the application site must be notified. The RWQCB must be notified of project termination through submittal of a Notice of Termination and a Final Discharge and Monitoring Report.

The suggested changes would clarify the frequency of reporting requirements and because land application projects tend to be long term, ongoing projects it clarifies that

45-10

the project would be terminated and not just completed for a given year. Notification should be restricted to neighboring residents as opposed to landowners, many of whom are absentee. Ostensibly, the purpose of notification is to inform potentially affected parties rather than alarm people upon which there will be no direct impact.

45-10 (cont)

Page ES-11, 3rd bullet, reads as follows:

"Groundwater monitoring would generally be required if the depth to groundwater at the disposal site is less than 25 feet and biosolids would be applied to the site more than twice in a 5 – year period."

RPI/Bio Gro suggests striking this requirement. Research has continuously demonstrated the fate of metals and pathogen movement is a minimal threat to groundwater.

45-11

Table ES-I, page 2 Mitigation Measure: 4-2 Extended grazing restriction period to allow for SOC biodegradation

RPI/Bio Gro suggests eliminating this mitigation measure. The potential for pathogens to survive diminishes over time with exposure to the harsh soil environment and ultraviolet radiation from sunlight. The EPA conducted extensive research, which included a risk assessment based on 14 different pathways, and determined that 30 days after biosolids application is a safe and protective time period until grazing and livestock activity may resume.

45-12

Table ES-I, page 3 reads Impact has a misspelling

45-13

Table ES-I, page 3 Mitigation Measure 5-2: Extended grazing restriction period to allow for pathogen reduction.

RPI/Bio Gro suggests eliminating this mitigation measure. The potential for pathogens to survive diminishes overtime with exposure to the harsh soil environment and sunlight. The EPA conducted extensive research, which included a risk assessment based on 14 different pathways, and determined that 30 days after biosolids application is a safe and protective time period until grazing and livestock activity may resume.

45-14

Table ES-I, page 5 Mitigation Measure 10-2: Control fugitive dust from unpaved roads

RPI/Bio Gro suggests:
Minimize fugitive dust from unpaved roads with a mandatory speed limit of 15 mph.

Most farms receiving biosolids throughout the state are in rural areas with few sensitive PM10 and PM 2.5 receptors. Also, because of the majority of agricultural sites are located in rural areas where the roads are typically not paved, imposing a limit on truck travel miles per day is not feasible for many sites.

45-15

Table ES-I, page 6 reads:

"Mitigation Measure 10-1: Properly maintain vehicles in good operating condition and limit truck travel on paved roads to 4,800 VMT."

45-16

RPI/Bio Gro suggests:
Mitigation Measure 10-1: Properly maintain vehicles in good operating condition and minimize truck travel on paved roads.

Most biosolids sources are situated among urban areas. Most farms receiving biosolids are in rural farm areas. Because of urban sprawl, the distance between the biosolids source and farms are often quite considerable and would make the land application unfeasible. 45-16 (cont)

Table ES-I, page 6 reads:
"Mitigation Measure 10-2: Control fugitive dust from unpaved roads"

RPI/Bio Gro suggests:
Minimize fugitive dust from unpaved roads with a mandatory speed limit of 15 mph.

Most farms receiving biosolids throughout the state are in rural areas with few sensitive PM10 and PM 2.5 receptors. In addition, sources of water for watering down roads with water trucks are not always available. 45-17

CHAPTER 2. Program Description

Page 2-11, 2nd paragraph
Clarify whether the NOI is required each year of intended biosolids application or a whether it's just a one-time requirement at the onset of the project. 45-18

Page 2-11, 3rd paragraph
The "threat to water quality" complexity ratings brings about negative connotations to the biosolids application. The majority of problems associated with land application of biosolids stem from public perception, and this rating system implies that no matter how big the farm there will be a threat to water quality if biosolids are applied. 45-19

Table 2-5. RPI/ Bio Gro suggests removing the Molybdenum cumulative loading limits, in accordance with the 40 CFR 503 standards. As the court found in the EPA lawsuit, there is no scientific justification for including the Molybdenum level. Furthermore, the issue regarding the potential toxicity of molybdenum to livestock is essentially an issue of nutritional balance, i.e., an excess of molybdenum in relation to other elements is what brings about toxicity problems. In biosolids, this is never a problem, because biosolids provide a balanced source of nutrients to the soil. 45-20

CHAPTER 3. Soils, Hydrology, and Water Quality

Page 3-1, 3rd paragraph titled Texture, reads:
"The pH (discussed below) of fine textured soils ranges from near neutral to alkaline."

RPI/Bio Gro suggests deleting this sentence because it is not accurate. Soils vary in pH depending on other factors, such as climate, parent material, biological activity, historical farming practices, etc. In fact, there is absolutely no correlation between soil texture and soil pH. 45-21

Page 3-2, 1st paragraph, reads:
"The pH of coarse textured soils ranges from near neutral to acidic." 45-22

RPI/Bio Gro suggests deleting this sentence because it is not accurate. See above. 45-22 (cont)

Page 3-2, Cation Exchange Capacity, 2nd sentence reads:
"Cations (calcium and ammonium) are often essential for plant growth..."

RPI/Bio Gro suggests:
"Cations (including calcium and nitrogen) are ~~often~~ essential for plant growth..." There are a minimum of sixteen (some need twenty) essential elements for plant growth, and they are: C, H, O, P, K, N, S, Ca, Fe, Mg, B, Mn. Cu, Zn, Cl, Mo. 45-23

Page 3-2, Organic Matter, reads:
"Organic matter, another important property of soil, enhances the physical condition of surface soil by binding individual soil..."

RPI/ Bio Gro suggests:
"Organic matter, another important property of soil, enhances the physical, biological, and chemical soil properties by binding individual soil..."

Soils are complex in nature. and the organic matter element impacts all three components of soils: physical, chemical, and biological. 45-24

Page 3-9, 1st paragraph, RPI/Bio Gro suggests adding:
"At Clemson University (McLeod and Hegg, 1984) a study of pasture runoff as a result of using various inorganic and organic fertilizer sources was conducted. In the study the authors concluded that runoff from plots with biosolids fertilizer had the least overall potential for pollution when compared to plots receiving dairy manures, poultry manures or chemical fertilizers.

Reference: McLeod, R. V. and R. O. Hegg. 1984. Pasture runoff water quality from application of inorganic and organic nitrogen sources. J. Environ. Qual. 13:122-126. 45-25

Page 3-10, last paragraph, RPI/Bio Gro suggests including in the discussion of nutrient uptake by plants via adsorption. 45-26

Page 3-11, Trace elements and heavy metals, reads:
"These occur in biosolids primarily in small quantities and, when released, often form sparingly soluble reaction products. Some trace elements are required for plant growth, whereas other heavy metals may be toxic to plants."

RPI/Bio Gro suggests:
Biosolids consist of both trace elements and heavy metals, most of which can be utilized by the plant. Most plants require sixteen essential elements for growth and development. Due to the nature of soils, those metals that can not be utilized by the plant will most likely be bound within the soil and not available. The determination of whether or not an ion will be taken up by a plant root is a function of mass ionic balance or the relative concentration of that ion in relation the concentration of other ions present in the soil solution 45-27

Page 3-13, Transport Mechanisms of Plant Nutrients to Surface Water and Groundwater, 2nd paragraph reads:

"The application of dewatered biosolids would probably have no significant impact on the quality of water emanating from watersheds in which dewatered biosolids are applied."

RPI/Bio Gro suggests:

The application of dewatered biosolids would ~~probably~~ have ~~no~~ minimal ~~significant~~ impact on the quality of water emanating from watersheds in which dewatered biosolids are applied.

There is much evidence to support that the properly managed land application of biosolids is not going to impact the groundwater and surface water, so we believe the impact potential is minimal.

45-28

Page 3-17, Synthetic Organic Compounds, paragraph 2 reads:

"The Part 503 regulations do not require that biosolids be testing for SOCs; however the proposed GO monitoring program would require testing of biosolids for PCBs and SVOCs."

RPI/Bio Gro suggests:

In the Risk Assessment used to establish the Part 503 Rule, the United States National Sewage Sludge Survey demonstrated that organic pollutants in biosolids occur at low levels that do not pose significant risk to the environment or public health. Additionally, many of the pollutants are no longer in use, or have been banned or restricted for use in the United States. Thus, based on the science from the NSSS findings, SOCs will continue to be measured as required by the wastewater treatment plant NPDES permit.

45-29

Page 3-23. RPI/Bio Gro suggests adding the following after the 3rd paragraph:

The ASA has also adopted the ARCPACS certification program that identifies individuals in soil and plant sciences. ARCPACS maintains a registry of certified professionals in the following areas: soils, agronomy, crops, weed science, plant pathology, and horticulture.

45-30

Page 3-28, last paragraph reads:

"The discharge of contaminants to surface waters from biosolids application sites can be prevented by controlling offsite runoff, avoiding wet-weather application of biosolids, and incorporating biosolids into the soil after application."

RPI/Bio Gro suggests:

The discharge of contaminants to surface waters from biosolids application sites can be **minimized** by ~~controlling offsite runoff~~, avoiding application of biosolids on saturated soils, applying biosolids at agronomic rates, maintaining buffer zone setbacks, and incorporating biosolids into the soil after application."

The biosolids are being incorporated into a farming program as a supplement to the fertilizer program. Farmers use Best Management Practices (BMP's) to keep their fertile topsoil from eroding, so naturally the farmers are concerned about preserving the farm for future generations. Farmers employ many strategies including vegetation, tillage, and

45-31

Mr. Todd Thompson
Draft EIR comments
September 9, 1999

other BMP's to minimize run-on/off control, and do not typically build structures to control run-on/off from the entire watershed. Remember, these land application sites are functioning farms, not dedicated disposal facilities. Thus, it is impractical to "control offsite runoff" from any major storm event!

45-31 (cont)

Page 3-29, Impact: Potential Degradation of Groundwater Nutrients, reads:

"The GO defines the agronomic rates as "the nitrogen requirements of the plant needed for optimal growth and production, as cited in professional publications for California, the County Agricultural Commissioner, or recommended by a Certified Agronomist."

RPI/ Bio Gro suggests:

"The GO defines the agronomic rates as "the nitrogen requirements of the plant needed for optimal growth and production, as cited in professional publications for California, the County Agricultural Commissioner, or recommended by a Certified Agronomist or **Soil Scientist**."

Again, ARCPACS sets the standards for professional certifications for agronomists and soil scientists alike. Soil scientists are qualified to determine the ecological implications of a recommended agronomic rate.

45-32

Page 3-31, 3rd paragraph, and throughout the document, RPI/Bio Gro recommends changing references to the RWQCB engineer to RWQCB **staff.** Not all RWQCB staff working on biosolids related projects are engineers.

45-33

Page 3-32, 2nd paragraph reads:

"The calculation of agronomic nitrogen uptake rates...agricultural engineers, agronomists..."

RPI/Bio Gro suggests:

"The calculation of agronomic nitrogen uptake rates...agricultural engineers, agronomists, **soil scientists**..."

Again, ARCPACS sets the standards for professional certifications for agronomists and soil scientists alike. Soil scientists are qualified to determine the ecological implications of a recommended agronomic rate.

45-34

Page 3-33, 2nd paragraph reads:

"As described above, the potential for surface water runoff of biosolids is low... prohibiting application to saturated or frozen ground or areas subject to washout, preventing runoff for the period within 30 days of application, and..."

RPI/Bio Gro suggests:

"As described above, the potential for surface water runoff of biosolids is low... prohibiting application to saturated or frozen ground or areas subject to washout, ~~preventing~~ **minimizing** runoff for the period within 30 days of application, and..."

Farms use vegetation, tillage, and other BMP's to minimize run-on/off control, and do not typically build structures to control run-on/off from the entire watershed. Remember,

45-35

these land application sites are functioning farms, not dedicated disposal facilities. Thus, it is impractical to "prevent runoff" from any major storm event! 45-35 (cont)

Page 3-34, 4th bullet reads:

"The proposed GO includes concentration limits and cumulative loading rates for chromium and molybdenum. The proposed GO is therefore more restrictive than the existing Part 503 regulations that do not include limits for these trace metals."

RPI/Bio Gro suggests deleting this bullet. The reason the EPA eliminated the cumulative loading rates for both molybdenum and chromium was because they had no scientific foundation for doing so in the first place. Similarly, the inclusion of these limits in the proposed GO is not based on science either, and is unnecessarily more restrictive than the existing Part 503. 45-36

Page 3-35, last paragraph reads:

"As described above, provisions of the GO would require dischargers to implement appropriate BMP's, such as maintaining setback distances from surface waters and wells...preventing runoff for 30 days after application, and requiring an erosion control plan..."

RPI/Bio Gro suggests:

"As described above, provisions of the GO would require dischargers to implement appropriate BMP's, such as maintaining setback distances from surface waters and wells...~~preventing~~ **minimizing** runoff for 30 days after application, and requiring an erosion control plan..." 45-37

The most common areas of land application are farms. Accompanying standard farming practices, the proposed GO requires vegetated buffer zones and application at agronomic rates, thus minimizing the potential for runoff from the site for 30 days and longer. Standard farms do not have runoff control structures other than the BMP's which are effective. It is not practical to control runoff from a farm other than by the use of BMP's

Page 3-37, 1st bullet reads:

"If it is found that in the future that the land application of biosolids is responsible for unlawful disposal of hazardous waste, cleanup actions (if required) would be taken by the responsible parties."

RPI/Bio Gro suggests omitting that statement. If biosolids are applied in accordance with the GO, then they are applied in a lawful manner and no hazardous wastes would have been spread on the soil. This statement only breeds fear. 45-38

CHAPTER 4, Land Productivity

Page 4-1, at the end of the 3rd paragraph, RPI/Bio Gro suggests adding the following statement: At this time, the application of most fertilizers is unregulated. 45-39

Page 4-2 reads:

"...both the physical and chemical conditions of the soil determine the inherent productivity..." 45-40

RPI/Bio Gro suggests:

"...~~both~~ the physical, **biological**, and chemical conditions of the soil determine the inherent productivity..."

Soils are complex in nature, and all three components of soils: physical, chemical, and biological impact its inherent productivity. 45-40 (cont)

Page 4-4, 1st paragraph reads:

"Elements that would be added to the soil include nitrogen, phosphorus, potassium, calcium, magnesium, sodium, and chloride. All of these elements except phosphorus are water soluble and can be leached from upper soil layers."

RPI/Bio Gro suggests:

"The major elements that would be added to the soil include nitrogen, phosphorus, potassium, calcium, magnesium, sodium, and chloride. All of these elements, except phosphorus which is not water soluble, will bond to the soil's cation exchange sites, and are not likely to be leached from upper soil layers. The nitrate form of nitrogen and chloride are water soluble and may be leached if the biosolids are not applied at agronomic rates." 45-41

The suggested change is based on basic soil science, and better reflects the soil environment.

Page 4-8, 1st bullet reads:

"A relatively narrow range of soils and crops were considered by the EPA in evaluating potential impacts on crop yields and productivity. This range did not adequately reflect the range of soil and crop conditions found in California."

RPI/Bio Gro suggests:

"A relatively narrow range of soils and crops were considered by the EPA in evaluating potential impacts on crop yields and productivity **based on worse case scenerios of areas with higher rainfall and lower soil pH's.** This range did not ~~adequately~~ reflect the specific range of soil and ~~crop~~ **climate** conditions found in California." 45-42

The suggested change is to reflect the fact a lot of research was done for the 503 Rule in harsher climates with more susceptibility for nitrogen and trace metals to move through the soil profile to groundwater.

Page 4-12, Mitigation Measure 4-2 Extended Grazing Restriction Period to Allow for SOC Biodegradation

These resting periods are stated to "promote maximum degradation of SOCs and pathogens before grazing animals are exposed to the soil."

RPI/Bio Gro suggests:

Omit the extended criteria above the 30 days as required by the Part 503 Rule. The 30-day restriction was based on scientific data and has been found to be adequate time to protect animal health. Unless there is scientific evidence to support the extended restriction, it should be eliminated. Each wastewater treatment plant is required to do 45-43

appropriate testing via their NPDES permits with the EPA. These reports typically show that the SOC's are minimal or non-detects. 45-43 (cont)

Page 4-15, Mitigation Measure 4-3: Track and Identify Biosolids Application Sites

RPI/Bio Gro suggests eliminating this mitigation measure. It is not a detriment to the environment to track biosolids. Biosolids are a recognized as a licensed and labeled soil amendment by the California Department of Food and Agriculture. The intent of this database would appear to address public concerns regarding crop contamination, and thus only perpetuate the negative public perception problem. 45-44

CHAPTER 5. Public Health

Table 5-1 Survival time needs a duration specified. 45-45

Page 5-29, Mitigation Measure 5-2: Extend Grazing Restriction Period to Allow for Pathogen Reduction extends the site resting period for grazing animals be extended to 90 days, and the site use by cattle for 60 days. These resting periods are stated to "promote maximum degradation of pathogens (and SOCs) before grazing animals are exposed to the soil."

RPI/Bio Gro suggests omitting the extended criteria above the 30 days as required by the Part 503 Rule. The 30 days restriction was based on scientific data and has been found as adequate time to protect animal health. Unless there is scientific evidence to support the extended restriction, it should be eliminated. Each wastewater treatment plant is required to do appropriate testing via their NPDES permits with the EPA. These reports typically show that the SOC's are minimal or non-detects. 45-46

CHAPTER 10. Air Quality

Page 10-8. Mitigation Measure 10-2: Control Fugitive Dust From Unpaved Roads, bullet 1 reads: "Limit truck travel on unpaved roads to 67 VMT per day."

RPI/Bio Gro suggests:
Limit truck travel on unpaved roads by imposing a speed limit of 15 mph.

Most farms receiving biosolids throughout the state are in rural areas with few sensitive PM10 and PM 2.5 receptors. Also because of the rural sites the roads are typically not paved. Imposing a limit on truck travel miles per day is not feasible for many sites. There are other alternatives, such as speed limit and mandatory road watering. 45-47

Page 10-8, Mitigation Measure 10-2: Control Fugitive Dust from Unpaved Roads, bullet 2 reads:

"Apply water or chemical stabilizers that have no secondary ecological effects to unpaved roads in sufficient quantities to prevent visible dust emissions and limit truck travel on unpaved roads to 134 VMT per day."

RPI/Bio Gro suggests:
"Apply water or chemical stabilizers that have no secondary ecological effects to unpaved roads[3] in sufficient quantities to prevent visible dust emissions and ~~limit~~ **minimize** fugitive dust by imposing a **15 mph speed limit** on unpaved roads." 45-48

Mr. Todd Thompson
Draft EIR comments
September 9, 1999

Some air quality districts are working with farmers to minimize PM2.5 and PM 10 emissions, and a 15 mph speed limit and watering roads are two of their most effective tools. This is a farming practice, and limiting truck traffic on the farm impedes the farming business, and is often not practical for the biosolids program. 45-48 (cont)

CHAPTER 11. Noise

Page 11-6, Mitigation Measure II-I: Avoid the Use of Haul Routes near Residential Land Uses reads:

"If the use of haul routes near residential land uses cannot be avoided, the project applicant and or transporter will limit project-related truck traffic to daylight hours (8 a.m. to 6 p.m.)."

RPI/Bio Gro suggests:
"If the use of haul routes near residential land uses cannot be avoided, the project applicant and or transporter will limit project-related truck traffic to daylight hours. ~~(8 a.m. to 6 p.m.).~~"

Confining operations to daylight hours is not feasible on many projects. The larger treatment plants operate round the clock and have minimal storage for their biosolids. Another difficulty in operating during daylight hours only, and especially the given time frame of 8am-6pm, is the coordination of truck travel time to the rural areas. In large urban areas restricting truck travel during daylight hours eliminates would necessarily mean that there is additional truck traffic on the roads when there is the most traffic. This would result in more traffic-related emissions being generated than is necessary. This limitation would also make land application not feasible in many areas. 45-49

CHAPTER 13. Cumulative Impacts

Page 13-4, 1st bullet reads:

"requirements for the discharger to use the services of a certified agronomist, crop advisor, or agricultural engineer to develop additional management practices related to: 1) determining the agronomic rate for biosolids application projects that includes all nitrogen sources applied..."

RPI/Bio Gro suggests adding:
"requirements for the discharger to use the services of a certified agronomist, crop advisor, soils scientist, or agricultural engineer to develop additional management practices related to: 1) determining the agronomic rate for biosolids application projects that includes all nitrogen sources applied..." 45-50

Again, ARCPACS sets the standards for professional certifications for agronomists and soil scientists alike. Soil scientists are qualified to determine the ecological implications of a recommended agronomic rate.

TABLE 15-1

RPI/Bio Gro suggests updating (and spell checking) TABLE 15-1 to reflect the proposed changes in this document. 45-51

State Water Resources Control Board Water Quality Order No. XX-XXX-DWQ, General Order

Page 2, Item 3a reads:

"Agriculture: The practice, science, or art of using the soil for the production of crops or raising livestock for man's use."

RPI/Bio Gro suggests:

"Agriculture: The practice, science, or art of using the soil for the production of crops and/or raising livestock for ~~man's~~ human use." 45-52

Agriculture is not limited to just crop production or livestock. "Man's" use may be intended to be all inclusive, but "human" is all inclusive.

Page 5, Item ak. reads:

"Tailwater: Excess water discharged to surface water bodies resulting from crop irrigation."

RPI/Bio Gro suggests:

Tailwater: Excess water ~~discharged to surface water bodies~~ resulting from crop irrigation. 45-53

Some farms have tailwater return systems that collect the tailwater and return it to the field, thus no water is discharged to surface water bodies.

Page 9, Item 12

RPI/Bio Gro suggests changing the classifications of varying "threats to water quality." The "threat to water quality" complexity ratings brings about negative connotations to the biosolids application. The majority of problems associated with land application of biosolids are public perception, and this rating system implies that no matter how big the farm there will be a threat to water quality if biosolids are applied. 45-54

Page 14, Item 7 reads:

"Surface water runoff the permitted site resulting from irrigation of sites to which biosolids has been applied is prohibited for 30 days after application of biosolids if vegetation in the application area and along the path of runoff does not provide 33 feet of unmowed grass or similar vegetation in the application area and along the path of runoff to prevent the movement of biosolids from the application site."

RPI/Bio Gro suggests: 45-55

"From the permitted site, irrigation water runoff shall be prohibited for 30 days after application of biosolids *if* the applied area does not provide a setback of 33 feet of unmowed grass or similar to prevent the movement of biosolids from the application site."

The wording on the first statement was difficult to follow, and the suggested language is just more concise.

Mr. Todd Thompson
Draft EIR comments
September 9, 1999

Page 14, Item 9 reads:

"Application of biosolids at rates in excess of the nitrogen requirements of the vegetation may be allowed for soil reclamation projects…A report prepared by a Certified Agronomist, Registered Agricultural Engineer or Registered Civil Engineer providing this demonstration…"

RPI/Bio Gro suggests:

"Application of biosolids at rates in excess of the nitrogen requirements of the vegetation may be allowed for soil reclamation projects…A report prepared by a **Certified Soil Scientist**, Certified Agronomist, Registered Agricultural Engineer or Registered Civil Engineer providing this demonstration…" 45-56

Again, ARCPACS sets the standards for professional certifications for agronomists and soil scientists alike. Soil scientists are qualified to determine the ecological implications of a recommended agronomic rate.

Page 14, Item 12 table, ceiling concentration (mg/kg dry weight) levels are such that the Copper ceiling is 2500 mg/kg and the lead ceiling is 350 mg/kg.

RPI/Bio Gro suggests adjusting the copper and lead ceiling rates to the scientifically based limits within the 40CFR503 Rule. Copper should then be 4300 and lead 840 mg/kg on a dry weight basis. 45-57

Page 15, Item B. 4. table, cumulative loadings (kg/ha) levels are such that the molybdenum level is 18 kg/ha and selenium is 100 kg/ha.

RPI/Bio Gro suggests adjusting the molybdenum and selenium cumulative loading rates to the scientifically-based limits within the 40CFR503 Rule. Molybdenum should be eliminated. 45-58

Page 15, Item 6 reads:

"If biosolids are applied to ground surfaces having a slope greater than ten percent, a report, including an erosion control plan, shall be prepared by a Certified Agronomist, Registered Agricultural Engineer…"

RPI/Bio Gro suggests:

"If biosolids are applied to ground surfaces having a slope greater than ten percent, a report, including an erosion control plan, shall be prepared by a Certified Agronomist, **Certified Soil Scientist**, Registered Agricultural Engineer…" 45-59

Again, ARCPACS sets the standards for professional certifications for agronomists and soil scientists alike. Soil scientists are qualified to determine the ecological implications of a recommended agronomic rate in any environment. Erosion control is a critical part of the soil science curriculum.

Page 17, Item 8 reads:

(b) 500 feet from domestic supply wells,
(f) 10 feet from agricultural buildings 45-60

RPI/Bio Gro suggests:
(b) 200 feet from domestic supply wells.
(f) omit

Most septic systems (untreated effluent) are permitted to be installed within 200 feet from the house and well. As required by the GO, biosolids must meet strict quality in order to be eligible for land application, and are applied at agronomic rates so that they are at most a minimal threat to water quality. Unlike septage, biosolids are treated to a level that reduces or eliminates pathogens and so they pose less of a threat to water quality than septic systems with their 200 foot setbacks do. 45-60 (cont)

Page 18, Item 6 reads:
"Biosolids' storage facilities that contain biosolids between October 1 and April 30 shall be covered during periods of runoff inducing periods."

RPI/Bio Gro suggests:
"Biosolids storage facilities will be evaluated on an individual basis." 45-61

Each site is unique in terms of local climate, soils, amount of biosolids to be stored, runoff controls, etc.

Page 20, Item 3 reads:
"Also, the discharger shall notify adjacent property owners with parcels abutting the subject land application site..."

RPI/Bio Gro suggests that this requirement be eliminated. The GO requires a minimum setback distance from adjacent property owners. The requirements of the GO are such that activities on the biosolids applied site will not impact the adjacent properties. 45-62

Pre-Application Report

RPI/Bio Gro suggests in the first paragraph that clarification be made as to the frequency of the required pre-application report (initial application, annually or ever?) and if the report must be submitted for each biosolids type to be applied to the site.

Page 1, Items 1b. and c. reads:
b. Run-on/runoff controls
c. Storage or staging areas

RPI/Bio Gro suggests:
b. be eliminated on the basis that this land application of biosolids is a standard fertilizer practice on a farm. The program has built in BMP's and erosion controls (i.e., agronomic rates, buffer zones, etc.), as discussed further in comments for Page 3-28.
c. Storage ~~or staging~~ areas. RPI/Bio Gro suggests omitting staging areas because staging areas often move within the appliable boundaries of the field, in order to avoid compacting one specific area. 45-63

Page 2, Item 2 reads:
"Description of treatment and how vector attraction reduction was achieved:____"

RPI/Bio Gro suggests:
"Description of vector attraction reduction option: ____."

Vector attraction reduction may be achieved in the field by 6-hour incorporation as per 40CFR503 and GO options.

Page 2, Item 3 Table requires the background soil concentrations for metals, nutrients, PCBs, and SOCs. RPI/Bio Gro recommends that the PCBs and SOCs background levels for soils be omitted from the requirement. These tests are very expensive and no limits on PCBs and SOCs are established, thus the data will be inconclusive. In addition, each EPA NPDES requirement evaluates the required testing program. 45-64

Page 3, Item 4 Table contains: Land Use Zone and Site Zoning, Public Access Controls, Runoff Controls, Distance to nearest water body.

RPI/Bio Gro suggests that either Land Use Zone or Site Zoning be used, and the others listed above be eliminated. Public controls are often not necessary on remote farm fields. Runoff controls, again, are inherent on the project by applying quality biosolids at agronomic rates, incorporation, and buffer zones. The distance to nearest water bodies should be included on the map if within buffer zone distance. If a creek runs through the property, then the buffer zones must be marked on the map, as per the GO. 45-65

Page 5, Item 8.b.3. reads:
"Identify all load restrictions for each traveled roadway"

RPI/Bio Gro suggests:
Eliminate this requirement, as the time required to evaluate every road that the trucks may travel on in any given area is not feasible. The proposed traffic route required in 8.b.1 is most descriptive. 45-66

Page 7, General Reporting
RPI/Bio Gro suggests that this section clarify t what form the anticipated RWQCB's response will be. Will it be a written response, or will the 30 day expiration be a given approval. 45-67

45-1. The commenter's support for the draft EIR is noted. No response is necessary.

45-2. The commenter's concerns are addressed in the Responses to Comments 45-3 through 45-67.

45-3. See Master Response 2.

45-4. Comment noted; however, this specific rating system used by the SWRCB and individual RWQCBs is codified in the California Code of Regulations and is not subject to change. It provides a uniform ranking system for use in establishing fees for waste discharge requirements.

45-5. Comment noted. After reviewing the qualifications for a certified soil scientist, the proposed GO has been changed to include that classification for field work. The text for draft EIR page ES-9, seventh bullet is revised as follows:

> "no application . . . for land reclamation sites if a certified agronomist, certified soil scientist, registered agricultural engineer, or registered civil engineer . . ."

45-6. Vegetation is not necessarily the same as unmowed grass. Vegetation could easily include shrubs and trees which would not serve the same purpose as a filter strip of unmowed grass.

45-7. See Master Response 9.

45-8. Comment noted. The text for draft EIR page ES-9, 11th bullet is revised as follows:

> "no application . . . in areas subject to gully erosion . . .".

45-9. Comment noted. The text for draft EIR page ES-10, fifth bullet is revised as follows:

> "If the slope . . . an erosion control plan must be prepared by a qualified ~~erosion control specialist~~ professional."

45-10. Comment noted. Currently both tenants and landowners are required to be notified. Also, the text for draft EIR page ES-11, first bullet is revised as follows:

> "An initial NOI must . . . for each ~~biosolids source and~~ discharge site."

45-11. As groundwater is closer to the ground surface, the potential effects of the application of soil amendments and fertilizers, including biosolids, is more likely to have an adverse impact on groundwater. Also, the cost of monitoring well system installation is reduced

with groundwater closer to the ground surface. We understand that metals and pathogens, when applied at an agronomic rate, are unlikely to travel through the soil column for significant distances in most of California's soils. However, the potential for nitrogen salts to travel if biosolids are applied at above an agronomic rate is much more likely. Groundwater monitoring, however, will be used to evaluate compliance. Also see Response to Comment 21-33.

45-12. The commenter recommends eliminating the mitigation measure that would extend the initial grazing waiting period from the Part 503 regulations-mandated 30 days, to 60-90 days. The commenter indicates that the potential for pathogens to survive diminishes over time with exposure to harsh soil environment and ultraviolet radiation from sunlight. The commenter also mentions the fact that the EPA 30-day grazing waiting period was based on extensive research and risk assessment analysis.

The fact that the potential for pathogens to survive diminishes over time in a harsh soil environment is precisely why SWRCB staff have recommended in Mitigation Measure 4-2 that the grazing wait period be extended. There remains some scientific uncertainty over the presence of pathogens and SOCs in soils to which biosolids have been added. The NRC, in its 1996 report on "Use of Reclaimed Water and Sludge in Crop Production," thought that additional research needs to be completed on the 30-day wait period. The mitigation measure is prudent and appropriately conservative in the absence of conclusive information on this issue. Also see Master Response 7.

45-13. On page 3 of Table ES-1, the first impact has been corrected as follows:

"Potential soil degradation at recreation-area ~~apploication~~ application sites"

45-14. See Master Response 8.

45-15. See Master Response 5.

45-16. See Master Response 5.

45-17. See Master Response 5.

45-18. Comment noted. The text for page 2-11, second paragraph of the draft EIR, is revised as follows:

"An important . . . must initially prepare and submit . . .".

45-19. The "threat to water quality" and "complexity" categories relate to the fee structures and should be included in the proposed GO and draft EIR. Also see Response to Comment 45-4.

45-20. See Master Response 4.

45-21. The intent of this sentence was to characterize the typical pH range associated with fine-textured soils. It was not intended to suggest that soil texture alone was the primary factor controlling pH, as it is indeed controlled to a lesser degree by the factors listed by the commenter. However, the second-to-last sentence in the third paragraph on draft EIR page 3-1 is hereby modified to clarify that not all fine-textured soils are near-neutral to alkaline:

> The pH (discussed below) of fine-textured soils typically ranges from near neutral to strongly alkaline.

45-22. The intent of this sentence was to characterize the typical pH range associated with coarse-textured soils. It was not intended to suggest that soil texture alone was the primary factor controlling pH, as it is indeed controlled to a lesser degree by the factors listed by the commenter. However, the first full sentence on draft EIR page 3-2 has been modified to clarify that not all coarse-textured soils are near-neutral to acidic:

> The pH (discussed below) of coarse-textured soils typically ranges from near neutral to strongly acidic.

45-23. The original sentence, through the use of "e.g," provided two examples (i.e., calcium and ammonium) of the 16 cations needed for plant growth. The second sentence in the second full paragraph on page 3-2 has been revised to provide a full listing of the cations required for plant growth, per the commenter's suggestion:

> Certain cations (i.e., carbon, hydrogen, oxygen, phosphorous, potassium, nitrogen, sulfur, calcium, iron, manganese, boron, copper, zinc, chlorine and molybdenum) are essential for plant growth in small. . . .

45-24. Comment noted. The role that organic matter plays in the physical, biological and chemical properties of soils is described in the remainder of the text under the "Organic Matter" header.

45-25. Comment noted. The EIR is hereby revised to include the following text as the second paragraph on page 3-9:

> At Clemson University (McLeod and Hegg 1984), a study of pasture runoff from areas treated with various inorganic fertilizer sources was conducted. Based on the results of the study, the authors concluded that runoff from plots with biosolids fertilizer had the least overall potential for pollution when compared to plots receiving dairy manures, poultry manures, or chemical fertilizers.

45-26. The commenter suggests including, in the last paragraph on page 3-10, a discussion of nutrient uptake by plants via adsorption.

Comment noted. The commenter rightly notes that some uptake of nutrients (and metals and organic substances) by plants occurs through adsorption of elements and compounds associated with fine dust deposited on leaves and aboveground portions of plants. This is the basis for horticultural management of plants by foliar sprays and dusting. Additionally, adsorption is a minor pathway, and the land application of biosolids is not likely to change this.

45-27. In response to the commenter's suggestion, the following text replaces the second bulleted item on page 3-11 of the draft EIR:

> Biosolids contain both trace elements and heavy metals, but generally in small quantities; most trace elements and heavy metals can be taken up by plants. Those metals which cannot be taken up by plants are usually bound by soil particles and will not be plant-available. High concentrations of certain heavy metals may be toxic to plants.

45-28. The suggested change is semantic in nature and would not substantively change the intent or significance conclusion finding for the impact.

45-29. See Responses to Comments 1-4 and 23-31.

45-30. The ARCPACS has been reviewed and it has been determined that the soil scientist certification program does require sufficient knowledge to perform some duties required by the draft EIR. However, since the draft EIR does not provide a discussion of the Board of Professional Engineers or Geologists and Geophysicists, a discussion of the ARCPACS will not be included.

45-31. The proposed GO requires control of runoff offsite in some specific cases. The recommended changes have not been made.

45-32. Comment noted. The text for page 3-29, third paragraph, third sentence of the draft EIR is revised as follows:

> "The GO defines . . . or recommended by a Certified Agronomist or Certified Soil Scientist."

45-33. Comment noted. Throughout the draft EIR, revise as follows: replace "RWQCB engineer" with "RWQCB staff."

45-34. The subject paragraph also references "other professionals." No change is needed.

45-35. Comment noted. The text for page 3-33, second paragraph, second sentence of the draft EIR is now revised as follows:

> "As described . . . to washout, requiring BMPs for runoff control or preventing . . ."

45-36. See Master Response 4.

45-37. Comment noted. The text for draft EIR page 3-35, last paragraph, fourth sentence of the is revised as follows:

> "As described . . . to washout, requiring BMPs for runoff control or preventing . . ."

45-38. The change requested by the commenter was not made because the statement in the EIR is factual. The statement does not imply that biosolids are considered hazardous materials.

45-39. The change requested by the commenter was not made because the EIR focuses on the effects of land application of biosolids. It does not compare these impacts to the effects or requirements for other soil amendments (fertilizer).

45-40. SWRCB staff agrees with the commenter. The first sentence of the first paragraph on page 4-2 has been changed as follows:

> ".....the physical, biological, and chemical conditions of the soil determine the inherent....."

45-41. SWRCB staff agrees with the commenter. The second through fourth sentences in the first paragraph on page 4-4 of the draft EIR have been hereby revised:

> The major ~~E~~elements that would be added to the soil from biosolids applications include nitrogen, phosphorous, potassium, calcium, sodium, and chloride. All of these elements except phosphorus are water soluble and, although they typically bond to soil particles, can be leached from upper soil layers. Phosphorus commonly is retained in the upper soil layers. The nitrate form of nitrogen is water soluble and may be leached to deeper soil layers and groundwater if applied in excess of agronomic rates.

45-42. The commenter suggests revising the text of the first bulleted item on page 4-8 to reflect the view that considerable research has been conducted in harsher climates with higher rainfall and lower soil pHs, increasing the potential for more nitrogen and trace metals to move through the soil profile to groundwater. These conditions are rare in California, particularly those likely to receive biosolids applications.

Comment noted. However, the commenter may wish to consider that soil texture, organic matter content and cation exchange capacity also affect the ability of a soil to bind metals and transmit water. As noted in Table D-7 (Appendix D of the draft EIR), several metals may be mobile in neutral or even alkaline soil pHs. The commenter may also wish to consider that irrigation of lands on which biosolids may be applied is much more common in California than the climatically harsher, eastern U.S. croplands. Irrigation, or perhaps more correctly inefficient or over-irrigation of these lands, can also transfer nutrients and metals applied to soils via biosolids to groundwater. For these reasons, the original draft EIR text is unmodified, with the comments made part of the final EIR record.

45-43. These comments also pertain to the recommended 60- to 90-day grazing waiting period identified as a mitigation measure. They indicated that the proposed GO should rely entirely on the risk study completed by the EPA that established the recommended 30-day waiting period. The commenter further noted that RWQCBs typically require wastewater treatment plants to test their sludge as part of their NPDES permit and that these tests typically show the sludge to have either low- or non-detectable levels of SOCs.

Also refer to Master Response 7 and Response to Comment 1-3.

45-44. Mitigation Measure 4-3, "Track and Identify Biosolids Application Sites," is intended to mitigate the public perception by produce buyers and consumers that crops have been contaminated or damaged by biosolids application. Providing information to the public about the continued safety of such crops benefits consumers and biosolids application proponents. Additionally, implementation of a tracking system for biosolids application sites will assist in the monitoring of the proposed GO. No change to the mitigation measure is required.

45-45. The appropriate changes have been made to Table 5-1, as noted in Response to Comment 9-2.

45-46. See Master Responses 7 and 8.

45-47. See Master Response 5.

45-48. See Master Response 5.

45-49. The last sentence of Mitigation Measure 11-1 on page 11-6 of the draft EIR is revised as follows:

> "If the use of haul routes near residential land uses cannot be avoided, the project applicant or transporter will limit project-related truck traffic to daylight hours ~~(8 a.m. to 6 p.m.)~~."

Existing noise regulations limit operations to daylight hours to reduce noise impacts on residential areas. These limitations do not apply to other routes. Identifying the range 8 a.m.-6 p.m., however, is unnecessarily restrictive. Deleting the identified time frame in the mitigation measure does not change the measure's effectiveness.

45-50. Comment noted. The text for draft EIR page 13-3, first bullet is revised as follows:

> "requirements for the . . . crop advisor, certified soil scientist . . ."

45-51. Table 15-1 has been revised based on changes to mitigation measures identified in this final EIR. Refer to Appendix C for a revised version of the Mitigation Monitoring Program, Table 15-1.

45-52. See Response to Comment 49-8.

45-53. See Response to Comment 23-30.

45-54. See Response to Comment 45-19.

45-55. See Response to Comment 49-17.

45-56. Comment noted. Prohibition No. 12 of the proposed GO has been revised to read:

> "Application of biosolids . . . by a Certified Agronomist, Certified Soil Scientist, Registered Agricultural Engineer . . ."

45-57. See Master Response 4.

45-58. See Master Response 4.

45-59. Comment noted. Discharge Specification No. 6 of the proposed GO has been revised as follows:

> "If biosolids . . . shall be prepared by a Certified Soil Scientist, Certified Agronomist, Registered Agricultural Engineer . . . soil erosion."

45-60. See Responses to Comment 23-38 and Master Response 3.

45-61. The proposed GO's requirement for covering stored material has been modified; it now requires covering if material is stored for more than 24 hours at the application site. See Master Response 9.

45-62. Notification of adjacent landowners helps prevent nuisances and nuisance complaints. Notification can also assist in limiting access.

45-63. The Pre-Application Report has been changed to omit any staging identification.

45-64. Comment noted. This portion has been revised and states the following:

> Description of ~~treatment and how~~ vector attraction reduction ~~was achieved~~ achievement:"

Soil testing for PCBs and SOCs was never intended. It is now clarified as not included in the reporting.

45-65. Public access controls, runoff controls, site zoning and distance to water bodies have been omitted from that portion of the document and included in the NOI.

45-66. The load restrictions for truck routes have been omitted .

45-67. The response to an emergency reporting will vary with the magnitude of the noncompliance. As required in Provision No. 17, written notification should be submitted within five days.